

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A thin-film magnetic head comprising:
an antiferromagnetic layer;
a pinned layer whose direction of magnetization is fixed by exchange-coupling with said antiferromagnetic layer;
a free layer whose direction of magnetization varies according to external magnetic field;
an intermediate layer disposed between said pinned layer and said free layer;
and
a pair of electrode layers for supplying a sense current to the free layer in a layer thickness direction of said free layer,
a first electrode layer of the pair of electrode layers ~~being connected to~~ contacting said pinned layer and a second electrode layer of the pair of electrode layers being placed above the free layer on a side opposite the pinned layer so as to cover the free layer.
2. (Previously Presented) A thin-film magnetic head according to claim 1, wherein said pinned layer comprises a first ferromagnetic layer in contact with said antiferromagnetic layer, a second ferromagnetic layer whose direction of magnetization is opposite to that of said first ferromagnetic layer, and a nonmagnetic spacer layer disposed between said first and second ferromagnetic layers;
said first electrode layer connected to said pinned layer being in contact with a track-width side face of said second ferromagnetic layer but not in contact with a track-width side face of said first ferromagnetic layer.

3. (Original) A thin-film magnetic head according to claim 2, wherein a face of said second ferromagnetic layer opposing said first ferromagnetic layer has an area smaller than that of a face of said first ferromagnetic layer opposing said second ferromagnetic layer.

4. (Previously Presented) A thin-film magnetic head according to claim 1, wherein said pinned layer, said intermediate layer, and said free layer are disposed between a substrate and said antiferromagnetic layer,

the second electrode layer of said pair of electrode layers that is not connected to the pinned layer is disposed above and in contact with the first electrode layer, and

the antiferromagnetic layer, the pinned layer and the free layer are disposed between the second electrode layer and a third electrode layer.

5. (Original) A thin-film magnetic head according to claim 1, wherein said intermediate layer is formed from an electrically conductive material.

6. (Currently Amended) A head gimbal assembly having a thin-film magnetic head mounted with a gimbal;

said thin-film magnetic head comprising:

an antiferromagnetic layer;

a pinned layer whose direction of magnetization is fixed by exchange-coupling with said antiferromagnetic layer;

a free layer whose direction of magnetization varies according to external magnetic field;

an intermediate layer disposed between said pinned layer and said free layer;

and

a pair of electrode layers for supplying a sense current in a layer thickness direction of said free layer,

a first electrode layer of the pair of electrode layers ~~being connected~~
~~to~~contacting said pinned layer and a second electrode layer of the pair of electrode layers
being placed above the free layer on a side opposite the pinned layer so as to cover the free
layer.

7. (Currently Amended) A hard disk apparatus comprising a hard disk adapted to
write magnetic information therein, and a thin-film magnetic head for reading said magnetic
information on said hard disk;

said thin-film magnetic head comprising:

an antiferromagnetic layer;

a pinned layer whose direction of magnetization is fixed by exchange-coupling
with said antiferromagnetic layer;

a free layer whose direction of magnetization varies according to external
magnetic field;

an intermediate layer disposed between said pinned layer and said free layer;
and

a pair of electrode layers for supplying a sense current in a layer thickness
direction of said free layer,

a first electrode layer of the pair of electrode layers ~~being connected~~
~~to~~contacting said pinned layer and a second electrode layer of the pair of electrode layers
being placed above the free layer on a side opposite the pinned layer so as to cover the free
layer.

8-10. (Cancelled)